

CLAIMS

1. A device for carrying out a tomographic method with at least one collimator and at least one detector for recording photons that pass through the collimator characterized by means for providing a relative straight-line movement between an object under investigation and the one or more detectors while carrying out the method.

2. The device according to claim 1 characterized in that the means can be positioned with an accuracy of less than 0.1 mm.

3. The device according to any one of the preceding claims characterized by an automatic positioning of the means.

4. The device according to one of the preceding claims characterized by a support as means for an object under investigation

5. The device according to claim 4 characterized in that the support is tiltable parallel to the detector's surface or detectors' surfaces

6. The device according to one of the preceding claims characterized in that the distance between the object and the

multi-hole collimator is smaller than the distance between the multi-hole collimator and the surface of the detector.

7. The device according to one of the preceding claims characterized in that the device comprises exactly two stationary detectors that are orthogonally aligned to each other.

8. The device according to one of the preceding claims characterized in that the multi-hole collimators have conical holes.

9. The device according to one of the preceding claims characterized in that the holes have keel-edge design.

10. The device according to one of the preceding claims characterized in that the holes of the collimator are tilted transaxially and/or axially in the direction of the object.

11. The device according to one of the preceding claims characterized in that the device contains a data processing unit for carrying out a reconstruction method.

12. A method of carrying out a tomographic method with a device according to one of the preceding claims 1 to 11 characterized in that the relative position between object and detector(s) is changed by means for providing a straight-line movement of the object and/or detector(s) during the procedure.

13. The method as claimed in claim 12 characterized in that the relative position between an object and detector(s) is changed with an accuracy of less than 1 mm, in particular with an accuracy of less than 0.1 mm.

5 14. The method as claimed in one of the preceding claims 12 to 13 characterized in that the detector or detectors and/or the object carry out straight-line movements and/or rotational movements during the method.

10 15. The method as claimed in one of the preceding claims 12 to 14 wherein the intervals of the single holes in the multi-hole collimator as well as the size and position of the object are chosen such that the photon generated images partially overlap on the detector's surface

15 16. The method as claimed in one of the preceding claims 12 to 15 characterized in that a reconstruction method considering position and angle specifications between detector(s) and object is used

20 17. The method as claimed in one of the preceding claims 12 to 16 characterized in that the reconstruction method is modeled on a PC.

18. A computer program provided to interact with a data processing unit such that the data processing unit performs a reconstruction method as claimed in claim 16 or 17.